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Cultural Orientations and Attitude towards Mental Illness

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The purpose of this study was to explore the relationships among race, individualism, collectivism, and attitude towards mental illness. Two hundred and fifty-two university students participated in the study. The Individualism-Collectivism scale (Triandis, 1995) and the Opinion about Mental Illness scale (Cohen & Struening, 1962) were used to measure cultural orientations and attitudes toward mental illness. One-way analyses of variance were conducted to examine racial differences in cultural orientations and attitudes. A simultaneous multiple regression analysis was used to examine relationships between race, individualism, collectivism, and authoritarian attitude. The results showed that (a) there were statistically significant differences in vertical collectivism (refers to a cultural orientation in which the individual is likely to identify with the in-group and is willing to sacrifice self-interests if required by the authority of the in-group) with Asian American students scoring higher than did European American students, (b) there were statistically significant differences in authoritarian attitude towards mental illness with European American students scoring lower than did Asian and Latino American student groups, and (c) horizontal collectivism (defined as a cultural orientation in which the individual sees the self as an aspect of an in-group and all members of the group as equal in social status) was related to less stigmatizing attitude and vertical individualism (defined as a cultural orientation that emphasizes hierarchy in social status, individual achievement, and competition) was correlated to more stigmatizing attitude towards mental illness after the influence of race was controlled.

People with mental illness constitute 18.1% of the total adult (age 18 years old or older) population in the U.S. (National Institute of Mental Health, 2016). They often face barriers in education, employment, and integration into society (Chou & Chronister, 2012; Corrigan, Larson, & Kuwabara, 2007; Corrigan, Powell, & Rüsch, 2012; Fabian & Edwards, 2002; Perlick et.al., 2001). According to the literature, the primary barrier for people with mental illness is the public's negative attitude rather than a person's mental limitations (Corrigan, & Kleinlein, 2005; Corrigan & Lam, 2007; Hahn, 1993; Kosyluk, Corrigan, & Landis, 2014; Smith-Osborne, 2012). In order to improve access to education, employment, and rehabilitation services for people with mental illness, it is important to investigate factors affecting attitudes toward these individuals and to foster a positive change of attitudes toward this population (Corrigan, 2000, 2003).

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Attitudes refer to latent or inferred psychosocial processes that lie dormant within a person unless evoked by specific referents (Antonak & Livneh, 2000). Previous researchers reported that certain demographic variables (e.g., gender and race), personal contact with people with disabilities, and psychological attributes were related to attitudes toward mental illness. Individuals who were European Americans, female, and had more contact with people with mental illness were more likely to have positive attitudes toward people with mental illness than those who were racial minority Americans (Chen, Brodwin, Cardoso, & Chan, 2002; Saeteremoe, Scattone, & Kim, 2001; Shokoohi-Yekta & Retish, 1991; Wha-

ley, 1997), male (Corrigan & Watson, 2007; De Crane, R. S., Speilberger, 1981; Hampton & Sharp, 2013; Vilchinsky, Werner, & Findler, 2010), and had less contact with people with mental illness (Angermeyer, 2006; Tsang, Tam, Chan, & Cheung, 2003). Corrigan and associates reported that people made attributions about the cause and controllability of an individual's mental illness. These attributions led to inferences about individuals' responsibilities for getting the disease and dangerousness of a person with mental illness. The inferences yielded emotional reactions including anxiety, fear, shame, etc. Because of these emotional reactions, people may have negative attitudes toward people with mental illness (Corrigan et al., 2007; Corrigan & Miller, 2004; Corrigan, Markowitz, Watson, Rowan, & Kubiak, 2003; Corrigan, Miller, & Watson, 2006; Rüsch, Corrigan, Todd, & Bodenhausen, 2010).

In recent years, there has been increasing interests in the influence of individualistic and collectivistic cultural orientations on attitudes toward mental illness. Individualism and collectivism are cultural linked attitudes and beliefs. They reflect shared norms, roles, and values organized around a central theme. At core, these constructs concern the relationship between the individual and the group. Historically, individualism was used as a synonym of liberalism in England in the 18th century. It referred to the freedom of individuals from the state, freedom of associated with others, etc. (Triandis, 2005, *p.* 207). In 1980, Hofstede introduced the concept into psychology. He identified the central theme of individualism as personal goals, uniqueness, and autonomy from groups. Collectivism, on the other hand, can find its roots in ancient Greek and Chinese cultures that emphasized group interests (Triandis, 2005, *p.* 207). The central theme of collectivism is the concept of individuals as aspects of groups or collectives (Triandis, 2005, *pp.* 209-212). There are two forms of individualism and collectivism: horizontal and vertical (Triandis, 2005, *pp.* 213-214; Triandis & Gelfand, 2012, *pp.* 510-511). The horizontal form emphasizes equality but the vertical form emphasizes hierarchy. The major value of vertical individualism is achievement that results in competition (Triandis & Gelfand, 2012, *p.* 511). The major value of horizontal individualism is the uniqueness of individuals. People with a horizontal individualism orientation prefer to have the freedom to express themselves but they see themselves as being of equal social status with other group members (Triandis & Gelfand, 2012). The major value of vertical collectivism is doing one's duty. People with a vertical collectivism tend to "conform to authorities" (Triandis & Gelfand, 2012, *p.* 511). The major value of horizontal collectivism is cooperation. People with a horizontal collectivism orientation "are high in the need for affiliation and in modesty" (Triandis & Gelfand, 2012, *p.* 511). Due to a limited space, the author will focus the subsequent discussions on the relation of these constructs with disability-related studies. A complete discussion of the history of research on individualism and collectivism can be found in chapter 2 of Triandis' (1995) book "Individualism and Collectivism" and in chapter 10 of Sorrentino, Cohen, Olson, & Zanan's book "Culture and Social Behavior".

Traditional conceptualizations of the four cultural orientations tend to view the above-mentioned values as bi-polar (individualism-collectivism). This view holds that in individualism dominated cultures such as the U.S. mainstreaming culture, people would be more likely to have the individualistic tendency (Triandis, 1995). On the other hand, individuals in collectivism dominated cultures such as the Chinese culture would be more likely to have the collectivistic tendency (Triandis, 1995). Furthermore, within countries such as the U.S. and Australia, where immigrants and racial and ethnical groups from traditionally named collectivism-oriented cultures constitute a considerable portion of the total population, European descendants tended to have higher individualism and lower collectivism levels than did racial and ethnic minorities (Rhee, Uleman, & Lee, 1996; Sue & Sue, 2007; Westbrook & Legge, 1993).

From the traditional conceptualizations of individualism-collectivism, some researchers postulated that having a disability might be shameful in collectivism-oriented cultures because the traditional values of these cultures emphasized family honor and having a person with a disability might be perceived as a dishonor to the family (Lam, Tsang, Chan & Corrigan, 2006; Papadopoulos, Foster, & Caldwell, 2013; Westbrook & Legge, 1993). These cultural explanations have some merits in that the model proposes that socialization patterns and institutional practices within a culture may facilitate or hinder the development of positive/negative attitudes toward people with disabilities.

However, previous findings on levels of individualism and collectivism across racial and ethnic groups and the role of individualism and collectivism in explaining attitudes toward disability are inconsistent. Some researchers have challenged the traditional conceptualizations of the individualism-collectivism constructs (Coon & Kemmelmeier, 2001; Komarraju & Cokley, 2008) as well as the role of individualism and collectivism in predicting attitudes toward disability (Rao, Horton, Tsang, Shi, & Corrigan, 2010). Gaines et al. (1997) found that there were no differences in individualism between European Americans and racial and ethnic minority Americans, but racial and ethnic minority groups, when taken as a whole, scored higher on collectivism than did European Americans. Coon and Kemmelmeier (2001) reported that (a) African and Asian Americans had higher levels of collectivism than did European Americans, (b) there was no difference in individualism between the Asian, Latino, and European Americans, and (c) African Americans had higher levels of individualism than did European Americans. Researchers of these studies suggested that the constructs of individualism and collectivism may not be bi-polar, but are two unipolar dimensions on which an individual and culture could be characterized (Coon & Kemmelmeier, 2001) and that individualism and collectivism may coexist within a person and culture (Komarraju & Cokley, 2008).

In terms of the relationship between individualism, collectivism, and attitudes toward disability, some of the recent studies (Hampton & Xiao, 2007; Rao et al. 2010) did not

support the traditional cultural explanations posited by Westbrook and Legge (1993) while others (Papadopoulos et al. 2013) provided some evidence that supported Westbrook and Legge's claim. Rao et al. (2010) investigated employers' individualism levels and stigmatizing attitudes toward employees with disabilities. Participants were from three different geographic cultures: Beijing, Hong Kong, and Chicago. In the Beijing and Hong Kong sample 100% were Han Chinese (the majority ethnical group in China). Within the Chicago group, 42% were European American followed by 25% for African American, 16% for Latino American, 12% for Asian American, and 5% for Native and Pacific Island American. The researchers found significant differences in both horizontal and vertical individualism orientations. The Chicago employers scored highest on horizontal individualism, followed by the Beijing and then Hong Kong employers. However, for the vertical individualism orientation, Beijing employers scored highest, followed by the Hong Kong employers and then the Chicago employers. Furthermore, results of a path analysis revealed that vertical individualism contributed to employers' perceptions that job candidates with disabilities were responsible for acquiring their conditions and were dangerous. In other words, employers with higher vertical individualism levels tended to have more stigmatizing attitudes toward people with disabilities than did those with lower levels of vertical individualism.

Hampton and Xiao (2007) investigated 416 American and Chinese pre-service teachers' attitudes toward people with intellectual disabilities. They found that horizontal individualism and horizontal collectivism predicted Chinese preservice teachers' attitudes toward people with intellectual disabilities when controlling the influences of previous contact with and knowledge of people with intellectual disabilities. The higher the levels of horizontal individualism and horizontal collectivism the more positive attitudes would be. For the American group, only horizontal collectivism predicted attitudes. The higher the level of horizontal collectivism the more positive attitudes would be.

Using the traditional bipolar model of individualism-collectivism, Papadopoulos et al. (2013) surveyed 305 United Kingdom-based individuals on their individualism-collectivism levels and attitudes toward mental illness. These individuals were from four subcultural groups: North American, Chinese, Greek, and White-British. The researchers reported that North Americans had the highest scores of individualism and the most favorable attitudes toward mental illness followed by White-British. Although the Greeks had the highest collectivism scores they were more positive towards mental illness than did the Chinese who scored next high on the collectivistic measures but held the least positive views of mental illness. For the American sample, lower individualism and higher collectivism predicted high authoritarian and high social restrictiveness attitudes, but higher individualism and lower collectivism predicted high benevolence. For the Chinese sample, only one type of attitude, the community's acceptance of mental health services, was predicted by higher individualism and lower collectivism. Authoritarian and social restrictiveness attitudes were not related to cultural orientations. Moreover, the individualism-collectivism measure failed to explain any type of attitudes for the Greek and White-British samples.

It seems that the previous studies were unable to reach agreements on (a) whether there are racial differences in individualism and collectivism across races in the U.S. and (b) whether individualism would predict positive attitudes toward disability and collectivism would predict negative attitudes toward disability across populations from different countries. These incongruent findings merit further investigations in this area. The purpose of the present study was to further examine differences in individualism, collectivism, and attitudes toward mental illness across Asian, European, and Latino Americans and to explore the relationships between race, individualism, collectivism, and attitudes toward mental illness.

Method

Participants

A comparative survey design was applied. A total of 252 seniors from a general education class at a public university in the Southwest region of the U.S. participated in the study. Of the participants, 7 were African American, 67 were Asian American, 55 were Latino American, 3 were Native American, and 120 were European American; 115 were male and 137 were female. The average age of the participants was 22 years old ($SD = 4.76$). About 31% of the participants were majoring in Business (e.g., accounting, finance, and marketing), 18% in Liberal Arts (e.g., interior design, political science, and language), 21% in human services (e.g., pre-nursing, speech pathology, and social work); 9% in Science/Engineering, 6% in communication, 2% had not decided on a major, and 13% did not answer the question.

Following Cohen (1988)'s suggestion, priori power analyses were conducted to decide the size of the sample prior to data collections. The analyses were conducted using GPOWER - a software tool for a general power analysis (Erdfelder, Faul, & Buchner, 1996). Given the two purposes of the study, two power analyses were conducted. The statistical test selected for the first power analysis was a one-way ANOVA F test. The type of power analysis was "a prior: compute required sample size given alpha, power and effect size." The following criteria were used: "power = .95, alpha level = .05, number of groups = 3, effect size $f^2 = .25$". The analysis indicated a sample size of 252 would provide adequate power to detect a medium effect size. A linear multiple regression fixed model F test was selected for the second power analysis. The type of power analysis was "a prior: compute required sample size given alpha, power and effect size". The following criteria were used: "power = .95, alpha level = .05, number of predictors = 6, effect size $f^2 = .15$." The analysis indicated a sample size of 146 would provide adequate power to detect a medium effect size. The sample size in the current study met the values suggested by the GPOWER analyses and was appropriate for the purposes of the study.

Instruments

The Individualism-Collectivism Scale (Triandis, 1995). The ICS consists of 32 questions. It has four subscales, including the Horizontal Individualism subscale, Vertical Individualism subscale, Horizontal Collectivism subscale, and Vertical Collectivism subscale. Each of the subscales contains eight items. Respondents rate their agreement with the statements on a 9-point Likert scale. Reversed items are converted for scoring. A total score for each scale is the sum of the responses given to the 8 items. High scores on each subscale indicate an endorsement of the cultural orientation represented by that subscale. The Cronbach internal consistency of the subscales ranged from .67 to .74. The ICS had acceptable convergent or discriminant validity (r = .45 or r = -.00; Singelis, Triandis, Bhawuk, & Gelfand, 1995).

The Opinions about Mental Illness Scale (Cohen & Struening, 1962). The OMI was initially developed to identify opinions about mental illness with predominant European Americans. Although developed more than 40 years ago, the OMI is still being used as a measure of attitudes (Hampton & Sharp, 2013; Murray & Steffen, 1999; Wallach, 2004). It has five subscales: Authoritarianism, Benevolence, Social Restrictiveness, Mental Hygiene Ideology, and Interpersonal Etiology. In the current study, only the Authoritarianism, Benevolence, and Social Restrictiveness subscales were used as these scales had an acceptable reliability when used with Asian, European, and Latino Americans (Cohen & Struening, 1962; Hampton & Zhu, 2011; Silva de Crane & Spielberger, 1981; Shokoohi-Yekta & Retish, 1991). The Cronbach internal consistency of the OMI ranged from .60 to .81. The validity of the OMI was supported by a factor analysis (Cohen & Struening, 1962).

The Authoritarianism subscale measures perceptions of people with mental illness as a class of people inferior to individuals without a disability. The Benevolence subscale corresponds to a paternalistic and sympathetic view of people with mental illness. The Social Restrictiveness subscale assesses the desire to restrict people with mental illness. Items on the OMI are scored on a 6-point Likert scale, ranging from strongly disagree (1) to strongly agree (6). High scores on each subscale indicate an endorsement of the ideas represented by that subscale. In the current study, the Cronbach internal consistency for the Authoritarianism, Benevolence, and Social Restrictiveness subscales were .74, .70, and .73, respectively.

In addition to the instruments used in the study, a demographic information sheet was developed by the researcher. The demographic information sheet included participants' age, gender, race, educational level, and major in college.

Procedures

An approval from the Institutional Review Board was obtained. The researcher contacted instructors of several general education classes that had a large number of senior students. After obtaining the approval of the instructors, the researcher went to the classes to distribute the research questionnaire at the end of the class. The researcher explained the purpose and confidentiality of the study to the potential participants and asked them for voluntary participation. Those who volunteered to participate completed the research instruments in class. Two hundred and eighty students were approached. Two hundred and fifty-two students completed the questionnaire and the total return rate was 86%. However, the numbers of participants in the Native American (3) and African American (7) groups were very small. These samples were not sufficiently large enough to make statistically relevant comparisons in subsequent analyses given the number of independent and dependent variables used in this study. These 10 individuals were excluded from the subsequent analyses to avoid testing errors.

Results

Racial Differences in Cultural Orientations and Attitudes

The Statistical Package of Social Sciences 23.0 was used to analyze the data. The distributions of all the scores were fairly normal (the skewness and kurtosis < 1.0). Only a small number of cases (3.7%) in the data had missing values and a pairwise deduction procedure was used to treat missing values. Means and standard deviations were calculated for cultural orientation and attitude subscales for each ethnic group (Table 1). Two one-way analysis of variance (ANOVA) were conducted to examine ethnicity differences in cultural orientations and attitudes toward mental illness, respectively. Results of the first ANOVA indicated that there was no statistically significant difference in horizontal collectivism and both horizontal and vertical individualism across the three ethnic groups. The only racial difference was found in vertical collectivism [F (2, 232) = 4.543, p < .012]. The Bonferroni Post Hoc Tests were conducted using SPSS 23 One-Way ANOVA, Bonferroni Post Hoc Test. The results showed that the overall difference in vertical collectivism was due to significantly higher scores of the Asian American students compared to the scores of European American students. Results of the second ANOVA indicated that there was no statistically significant difference in benevolence and social restrictiveness attitudes across the three racial groups. However, there was

Table 1

Means and Standard Deviations of Cultural Orientation and Attitude Subscales by Race

Variable	Asian American		European American		Latino American	
	M	*SD*	*M*	*SD*	*M*	*SD*
H individualism	55.65	8.84	56.22	7.67	58.76	8.61
V individualism	42.19	10.44	41.78	12.91	43.15	13.01
H collectivism	56.40	8.97	56.11	11.29	56.84	8.08
V collectivism	49.54	8.99	45.41	9.07	45.42	9.39
Authoritarianism	21.91	8.55	18.20	8.17	22.68	7.22
Benevolence	44.65	7.45	44.75	7.68	45.63	4.72
Social Restrictiveness	18.61	6.80	17.21	6.85	19.56	7.13

N = 235; H = horizontal, V = vertical

a significant racial difference in authoritarian attitude [F (2, 232) = 7.577, $p < .001$]. The Bonferroni Post Hoc Tests were conducted using SPSS 23 One-Way ANOVA and the result showed that both Asian and Latino American students scored significantly higher on the authoritarian attitude towards mental illness than did European American students.

Relationships among Race, Cultural Orientations, and Attitudes

Because the author was interested in determining whether, and to what extent, race and cultural orientations were useful in explaining attitudes toward people with mental illness, a simultaneous multiple regression analysis with a .05 alpha level for the significance test of coefficients was conducted to examine the additive effects of participants' race and cultural orientations on attitudes toward people with mental illness. Since race was a three-category variable, it was dummy-coded into two variables with European American as the reference in order to include the variables in the regression analysis. The first race variable reflected Asian American students and the second race variable reflected the Latino American students. The regression model included four predictors: two dummy-coded race variables, vertical individualism, and horizontal collectivism. Horizontal individualism and vertical collectivism were excluded from the regression analysis as these two variables showed higher than .40 correlations with other predictor variables. The dependent variable in the regression model was authoritarianism. Benevolence and social restrictiveness were excluded from the regression analysis since the results of the one-way ANOVA did not reveal significant racial differences in these attitudes.

Following Cohen, Cohen, West, and Aiken's (2003, p.419) suggestion, tests of multivariate normality, linearity, independence of observations, and homoscedasticity of the variance were conducted for the multiple regression model. Results of the tests showed that the relationship between the predictors and the dependent variable was linear, the errors were normally distributed, and the error variance was constant.

Table 2

Simultaneous Multiple Regression Analyses Predicting Authoritarian Attitude towards Mental Illness from Race and Cultural Orientations

Variable	B	β	95% CI
Constant	21.659		[14.67, 28.64]
Asian vs. European	3.453	.182**	[1.00, 5.90]
Latino vs. European	1.244	.211**	[1.63, 6.81]
V individualism	.129	.212**	[.04, .21]
H collectivism	-.155	-.220**	[-.26, -.05]
R^2	.129		
F	8.373		

Note. N = 230. CI = confidence interval. H = horizontal. V = vertical. ** = $p < .01$.

The two dummy-coded race variables and two cultural orientation variables were regressed on authoritarianism. The results of the simultaneous multiple regression analysis are presented in Table 2. The model accounted for 13% of the variance in attitudes toward people with mental illness (R^2 = .129 , adjusted R^2 =.114), F (4, 226) = 8.373, $p < .0001$. All four predictors made significant contributions to the prediction of attitudes toward people with mental illness. To assess for the presence of multicollinearity, the collinerity statistics were examined (Cohen et al., 2003, pp. 422-425). It was found that the values of the tolerances ranged from .844 to .980 and the values of the variance inflation factors (VIF) ranged from 1.000 to 1.121, suggesting no multicollinearity was evident.

Discussion

Consisting with Coon and Kemmelmeier (2001)'s meta-analysis results that challenged the traditional conceptualizations of the individualism and collectivism constructs, the present study indicated that there was no significant difference in horizontal nor vertical individualism between the Asian, Latino, and European American students. In the contemporary American society, individual rights, personal privacy, freedom, and autonomy are highly valued and reflected in laws, socio-economic-political policies, and institutional operations. Although the Asian and Latino American students may maintain their own cultural values such as the emphases on group, they may no less than their European American counterparts embrace the values of individual rights and autonomy in the struggle for achieving their "American dreams." This may explain why the individualism level for Asian and Latino American students were similar to their European American counterparts. On the other hand, with the emphases on diversity and multiculturalism, American society is in transformation. Group work that emphasizes equality within a group has been adopted into university classrooms and the operation of many organizations. As part of class assignments, students are routinely required to work as a team on group projects across academic disciplines. This kind of academic practice may help to cultivate the worldview of equality within a group that bears some resemblances to the value of horizontal collectivism. This may explain the similar level of horizontal collectivism between European American students and the other two ethnic groups.

Congruent with previous findings, the Asian and Latino American students in the present study expressed higher levels of authoritarian attitude towards mental illness than did the European American students. However, contrary to Papadopoulos et al (2013)'s and Westbrook and Legge (1993)'s attribution of ethnic differences to the differences in individualism-collectivism, cultural orientations did not mediate the relationship between race and authoritarian attitude towards mental illness in the present study. The finding implies that the strong authoritarian attitude towards mental illness among the Asian and Latino American students may not result from any pattern of cultural orientations.

Furthermore, compared to previous studies by Papadopoulos et al. (2013) and Rao et al. (2010), a somewhat different pattern of relationship among race, cultural orientations, and attitude emerged from the present study. Vertical individualism was positively related to stigmatizing attitude towards mental illness. The higher the vertical individualism level the stronger the authoritarian attitude will be. Although the correlation between the authoritarian attitude and vertical individualism was at a low level (r = .212), the result of the present study supported Rao et al's finding on the role of vertical individualism in developing negative attitudes towards people with disabilities. Contrary to Papadopoulos et al.'s study, collectivism in the horizontal form was negatively correlated with stigmatizing attitude toward mental illness in the present study. The higher the horizontal collectivism level the less stigmatizing attitude will be (r = -.22). This finding adds more complexity to the use of the individualism and collectivism constructs in predicting attitudes toward mental illness.

Vertical individualism views the individual as more or less equal in status with others. The nature of emphasizing competitiveness and hierarchy in human relationship in vertical individualism may explain why this construct was positively related to stigmatizing (authoritarian) attitudes that view people with mental illness as less valuable individuals. On the other hand, horizontal collectivism values cooperation and modesty. Students who hold this anti-hierarchical and egalitarian view might see people with mental illness as part of their own group and, as members of the same group, these individuals are as equal as themselves.

Implications

Findings of the present study have several implications for future research and practice. First, in agreement with previous studies (e.g., Coon & Kemmelmeier, 2001), the results of the present study indicate that cultural orientations of different racial groups are more complex than the traditional conceptualizations which hold that European Americans have an individualistic orientation and racial minority Americans have a collectivistic orientation. When teaching diversity-related courses such as multicultural counseling courses, rehabilitation educators should not overly simplify cultural orientations of different racial and ethnical groups. Rather, educators may need to explain the complexity of cultural orientations to students by introducing research evidence founded in the literature.

Second, the findings of the present study did not support the assumption that racial differences in authoritarian attitude towards mental illness was due to differences in cultural orientations. When working with cultural diverse clients or teaching psychosocial aspects of disability, rehabilitation counselors or educators should not simply attribute attitude towards mental illness of any given racial and ethnic individual or group to a specific cultural orientation. Rather, they need to be aware of the potential ethnic differences in stigmatizing attitudes, continue to learn factors affecting attitudes toward mental illness across racial and ethnic groups, and develop culturally sensitive attitude-change interventions based on empirical research evidence.

Lastly, findings of the present study provided some evidence on the positive correlations between vertical individualism and stigmatizing attitude towards mental illness and the negative correlation between horizontal collectivism and stigmatizing attitude. Given that both horizontal collectivism (in the present study) and horizontal individualism (in Rao et al.'s study) were related to less stigmatizing attitudes toward mental illness, it is plausible to further investigate if the horizontal-vertical dimension rather than the individualistic-collectivistic dimension would make a difference in attitudes toward mental illness. Ongoing research is needed to clarify the relationships between these constructs.

Limitations

While the results of this study have implications for the rehabilitation field, certain limitations of the present study should be acknowledged. First, the present study used a direct measure of attitudes toward mental illness. Several researchers pointed out that a direct measure of attitudes had a number of disadvantages including attempting to give a good impression of oneself as open-minded (Antonak & Livneh, 2000). In addition, the individualism and collectivism levels were based on self-report of the participants. Hence, social desirability might affect individuals' responses to the instruments. Furthermore, although the cultural orientation and Opinion to Mental illness scales had acceptable internal consistency, no test-retest reliability, which is more important in assessing reliability, was available. Thus, the results should be interpreted with caution.

Second, the sample of the present study only included university students. The representativeness of the sample was very limited. Findings of the study should not be applied to non-university student populations such as people who do not have a college degree in the U. S. Future investigations may use a broader sample that represents different groups in communities. In addition, there are many subgroups within each of the racial groups in terms of the country of origin, cultural unique practice, language, religion. Labeling the participants into three groups: Asian, European, and Latino Americans may not be able to capture the heterogeneity of these groups.

Finally, caution should be exercised when attempting to predict attitudes toward mental illness based on race, individualistic and collectivistic cultural orientations as these variables had limited powers of explaining attitudes toward mental illness. In the present study, race alone only accounted for a very small proportion (5%) of the variance. Although adding cultural orientation variables to the model increased the explanatory power to 13%, much variance was still unexplained for attitudes toward mental illness. Rehabilitation professionals may need to explore more pertinent variables such as the value of shame (Chan, Hedl, Parker, Lam, Chan, & Yu, 1988) and power structures within communities (Rao et al.'s, 2010) in relation to attitudes toward mental illness.

Conclusion

Built on the previous attitude studies, the current investigation made an effort to further understanding of the roles of race, individualism, and collectivism in explaining stigmatizing attitudes toward mental illness. Three main conclusions emerged from the data: (a) Asian American and Latino American students did not have significant lower levels of individualism compared to European American students, (b) horizontal collectivism was related to less stigmatizing attitude, but vertical individualism was related to more stigmatizing attitude; and (c) ethnic differences in authoritarian attitude towards mental illness could not be simply attributed to differences in cultural orientations. Although the results of the present study provide several promising directions for future studies on the individualism and collectivism constructs, researchers should avoid interpreting all across ethnicity differences in attitude towards mental illness as attributable to an individualism or a collectivism cultural orientation.

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